PATENT COOPERATION TREATY

TRANSLATION INTERNATIONAL SEARCHING AUTHORITY To: WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1) See form PCT/ISA/210 Date of mailing (day/month/year) FOR FURTHER ACTION Applicant's or agent's file reference See paragraph 2 below 302I/18485 d/s Priority date (day/month/year) International filing date (day/month/year) International application No. 21.01.2004 15.01.2005 PCT/EP2005/000369 International Patent Classification (IPC) or both national classification and IPC B01J8/02 Applicant UHDE GMBH This opinion contains indications relating to the following items: Box No. I Basis of the opinion Box No. II Non-establishment of opinion with regard to novelty, inventive step and industrial applicability Box No. III Box No. IV Lack of unity of invention Reasoned statement under Rule 43bis. I(a)(i) with regard to novelty, inventive step or industrial Box No. V applicability; citations and explanations supporting such statement Box No. VI Certain documents cited Certain defects in the international application Box No. VII Box No. VIII Certain observations on the international application **FURTHER ACTION** If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered. If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCI/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later. For further options, see Form PCT/ISA/220. For further details, see notes to Form PCT/ISA/220. Name and mailing address of the ISA/EP Authorized officer

Telephone No.

Facsimile No.

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/EP2005/000369

Βo	No. I	Busis of this opinion
1.		regard to the language, this opinion has been established on the basis of the international application in the language in which it was unless otherwise indicated under this item.
		This opinion has been established on the basis of a translation from the original language into the following language which is the language of a translation furnished for the purposes of international search (under
		Rule 12.3 and 23.1(b)).
2.		regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed ion, this opinion has been established on the basis of:
	a. 1	type of material
	[a sequence listing
	[table(s) related to the sequence listing
	b . 1	format of material
	ſ	in written format
	Ī	in computer readable form
	c. 1	time of filing/furnishing
	ſ	contained in the international application as filed.
	ŗ	filed together with the international application in computer readable form.
	Ī	furnished subsequently to this Authority for the purposes of search.
	_ '	
3.	<u> </u>	In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4.	∧dditi	onal comments:
	•	
		•
ł		

. WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/EP2005/000369

Box No. V Reasoned statement under Ru citations and explanations sup			ulc 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; pporting such statement	
1.	Statement			
	Novelty (N)	. Claims	1-8	YES
		Claims		NO
	Inventive step (IS)	Claims	1-8	YES
		Claims		NO
	Industrial applicability (IA)	Claims	1-8	YES
		Claims		NO
2.	Citations and explanations:			

Closest prior art.

D1 (US2002/0098136), which is considered to be the closest prior art, discloses a process and an apparatus for the injection of oxygen in which oxygen is injected tangentially between two catalytic fixed beds (see D1: International Search Report). The fixed beds here are cylindrical.

2. Novelty.

The subject matter of claims 1 and 5 differs from D1 in that oxygen is introduced into a ring distributor system and is ejected from a plurality of outlet openings in the ring distributor system at an angle deviating from the vertical onto the catalyst surface of a catalytic fixed bed, with radial flow.

3. Inventive step.

The technical problem addressed compared to D1 is to achieve better mixing of the reactants in a radial reactor. The introduction of oxygen at an angle deviating from the vertical directly onto the catalyst surface of the fixed bed allows rapid mixing of the reactants to be achieved (see description: page 2, paragraph 1). D1 describes only introduction of oxygen between the two fixed beds. The subject matter of claims 1-8 can be considered to be inventive (PCT Article 33(3)).

PATENT COOPERATION TREATY

From the	TONAL SEARCHING AUTHOR	UTY		ANG	
To:				PCT PCT	
				RITTEN OPINION OF THE IONAL SEARCHING AUTHORITY	
·			(PCT Rule 43 <i>bis</i> .1)		
				See form PCT/ISA/210	
Applicant's	or agent's file reference		FOR FURTHER ACTION See paragraph 2 below		
3021/	18485 d/s				
International application No.					
B01J8 Applicant UHDE	•				
L				<u> </u>	
2. F1 If In this this pro-	Box No. I Basis of the Box No. II Priority Box No. III Non-establi Box No. IV Lack of unit Box No. V Reasoned st applicability Box No. VI Certain doct Box No. VII Certain defe Box No. VIII Certain obst JRTHER ACTION a demand for international prelimernational Preliminary Examining and this one to be the IPEA and the is International Searching Authority this opinion is, as provided above, itten reply together, where appropriate in the content of the co	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability Lack of unity of invention Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement Certain documents cited Certain defects in the international application Certain observations on the international application Note that the international application will be considered to be a written opinion of the nary fixannining Authority ("IPFA") except that this does not apply where the applicant chooses an Authority other relief PEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of rehing Authority will not be so considered. provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA are, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form re the expiration of 22 months from the priority date, whichever expires later.			
3. Fa	r further details, see notes to Form	PCT/ISA/220.	•		
Name and	ailing address of the ISAGD		Amborized office		
ivaine and n	ailing address of the ISA/EP		Authorized officer		
	•				
Facsimile N	0		Telephone No.		

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/EP2005/000369

Bu	No. I	Busis of this opinion	
1.		regard to the language, this opinion has been established on the basis of the international application in the language in which unless otherwise indicated under this item.	it was
		This opinion has been established on the basis of a translation from the original language into the following language	
	•	, which is the language of a translation furnished for the purposes of international search (Rule 12.3 and 23.1(b)).	under
2.		regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the clation, this opinion has been established on the basis of:	aimed
	a.	type of material	
		a sequence listing	
		table(s) related to the sequence listing	
l	b.	format of material	
İ		in written format	
		in computer readable form	
	c.	time of filing/furnishing	
		contained in the international application as filed.	
		filed together with the international application in computer readable form.	
		furnished subsequently to this Authority for the purposes of search.	
3.		In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been fi furnished, the required statements that the information in the subsequent or additional copies is identical to that in the applicationed or does not go beyond the application as filed, as appropriate, were furnished.	
4.	Λddi	tional comments:	
1			
		a contract of the contract of	
		·	

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/EP2005/000369

Box		citations and explanations supporting such statement			
1.	Statement				
	Novelty (N)	Claims	1-8		YES
		Claims			NO
	Inventive step (IS)	Claims	1-8		YES
	•	Claims			NO
	Industrial applicability	(IA) Claims	1-8		YES
		Claims			NO
l					

- 2. Citations and explanations:
 - Closest prior art.

D1 (US2002/0098136), which is considered to be the closest prior art, discloses a process and an apparatus for the injection of oxygen in which oxygen is injected tangentially between two catalytic fixed beds (see D1: International Search Report). The fixed beds here are cylindrical.

2. Novelty.

The subject matter of claims 1 and 5 differs from D1 in that oxygen is introduced into a ring distributor system and is ejected from a plurality of outlet openings in the ring distributor system at an angle deviating from the vertical onto the catalyst surface of a catalytic fixed bed, with radial flow.

3. Inventive step.

The technical problem addressed compared to D1 is to achieve better mixing of the reactants in a radial reactor. The introduction of oxygen at an angle deviating from the vertical directly onto the catalyst surface of the fixed bed allows rapid mixing of the reactants to be achieved (see description: page 2, paragraph 1). D1 describes only introduction of oxygen between the two fixed beds. The subject matter of claims 1-8 can be considered to be inventive (PCT Article 33(3)).